

Watershed Planning and Flood Resiliency

A Conversation about Tactical Basin Planning as a tool to Identify Flood Resilience Opportunities and Priorities

Watershed Planning Program

Water Investment Division

Vermont Department of Environmental Conservation

July 31, 2023

Presentation Overview:

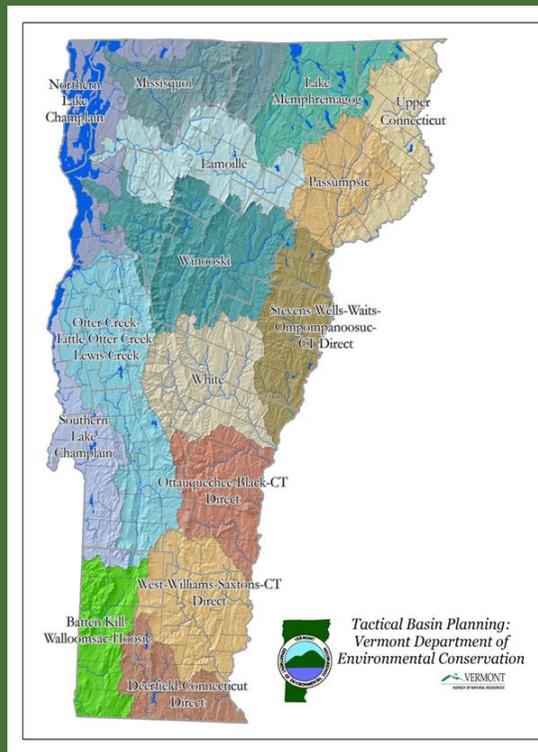
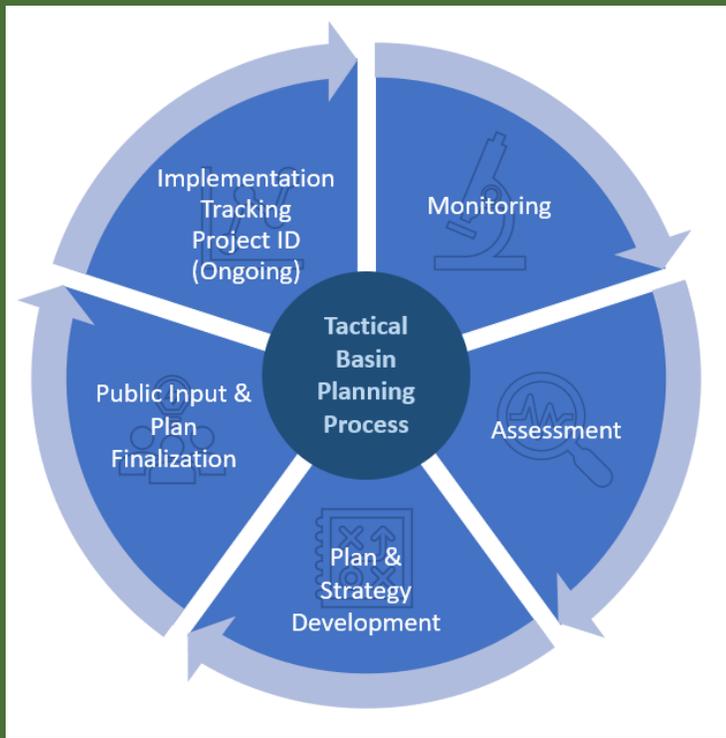
Introduction (Ethan Swift)

- Project types for flood resilience

Protection Strategies and Projects (Karen Bates)

Restoration Strategies and Projects (Marie Caduto and Angie Allen)

Wrap-up and Lessons Learned (Keith Fritschie)



BY THE NUMBERS

15
Planning basins in Vermont

5
Basin Planners

3
Basins covered by each planner

1
Tactical Basin Plan prepared for each watershed

5
Years between each plan update

Resiliency Projects Make a Difference

- Resiliency projects are identified in TBPs
- Resiliency projects have and are being implemented
- Resiliency projects can be identified in the WPD as:
 - Hazard Mitigation
 - Floodplain/Stream/Lake Shore/Wetland Restoration
 - Road Project Implementation
 - Dam Removal
 - Water Resource Protection

ID	Project Name	Project Type	Status
2740	Woodstock Village sewer resiliency	Hazard Mitigation	Proposed
2753	3466 South Road	Hazard Mitigation	Proposed
2757	South Woodstock Wastewater Treatment Facility	Hazard Mitigation	Proposed
2759	4895, 4903 South Road Buy-outs	Hazard Mitigation	Proposed
2761	Green Mountain Horse Association - disaster planning	Hazard Mitigation	Proposed
2762	Green Mountain Horse Association - equipment storage	Hazard Mitigation	Proposed
2935	EAP on state owned dams	Hazard Mitigation	Proposed
2936	Woodward Reservoir dam rehab & EAP	Hazard Mitigation	Proposed
3045	Phase IV Jacobs Road Project - Moretown	Hazard Mitigation	Proposed
3046	Moretown Common Road Landslide	Hazard Mitigation	Proposed
4642	Rush Meadow Rd. Utility Repairs	Hazard Mitigation	Proposed
4692	Flamstead Rd. Bridge replacement	Hazard Mitigation	Proposed
4698	Windsor High School Sewer Line Retrofit	Hazard Mitigation	Proposed
4699	Rt 44 Home Buyout	Hazard Mitigation	Proposed
4700	Railroad Transportation Resiliency (M09)	Hazard Mitigation	Proposed
4701	Infrastructure Resiliency at Rt. 103 and Rt. 10 Intersection	Hazard Mitigation	Proposed
4702	Railroad Bridge near Newton Rd.	Hazard Mitigation	Proposed
4703	Smokeshire Rd. Resiliency	Hazard Mitigation	Proposed

Protection

Town adoption of FEMA maps and additional Floodplain Protection Bylaws

Partners

Regional Planning Commission and Watershed groups

Technical Assistance

DEC Floodplain Program

Financial Assistance

DEC Floodplain Program; TBP-support grants

Protection River Corridor Easements and Riparian Planting Upper Missisquoi, Lowell



Things We Got Right

2011



Floodplain Protection

2023



Melrose Terrace Buy-out & Floodplain Restoration



2011



2023

Grafton Riparian Buffer



2011



2023  VERMONT

West Windsor Firehouse Dam



West Windsor Firehouse Dam



West Windsor Harrington Dam



2011



2023  VERMONT

West Windsor Harrington Dam



Cold Spring Brook Dam



2011



2023  VERMONT

Ascutney Hospital Stormwater Treatment



Ascutney Stormwater Treatment



MRGP Road Stabilization





Brandon Overflow Culvert



More work to be done

2011



2023

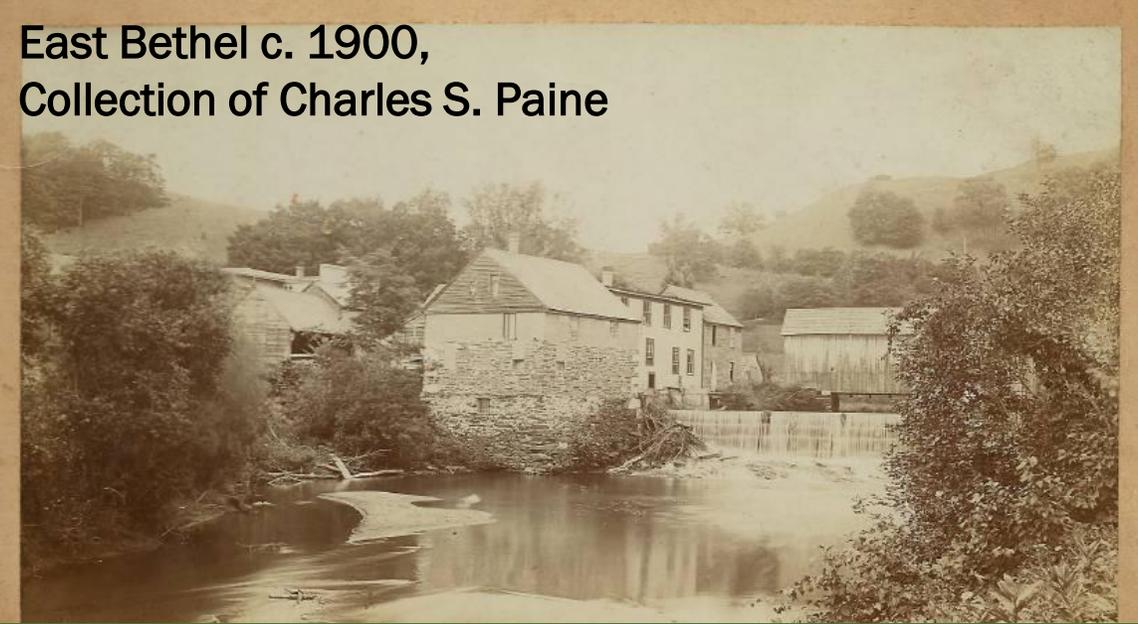


Historical management increased flooding impacts

White River 1912, Vermont
Historical Society



East Bethel c. 1900,
Collection of Charles S. Paine



Castleton River, 1927



Montpelier, 1959

Basin plans highlight agency and partner actions that can improve flood resiliency, e.g.,:

Agriculture

- Riparian buffers
- Infiltration practices
- Field runoff practices

Developed Lands

- MRGP compliance
- Stormwater master planning and implementation

Natural Resources

- River and wetland easements
- Buyouts
- River Corridor bylaws
- Berm/dam removal
- Culvert size upgrade
- Floodplain, in-channel, and lakeshore restoration projects

Plans identify strategies, priority geographies, partners, and funding opportunities

	STRATEGY	PRIORITY SUBBASIN	FOCUS AREA	PARTNERS	FUNDING
29	Support municipal adoption of flood hazard by-laws and river corridor protections to meet ERAF standards	Basin-wide	Barnard, Bridgewater, Cavendish, Hartland, Hartford, Pomfret, Woodstock	DEC, NRCD, RPC, CRJC	TBPSG, MPG
30	Support the removal of the streamside berms to increase floodplain access	Basin wide	All towns	NRCD, DFW, DEC, Watershed Groups	CWF, SWG, PFW
31	Support dam removals and bridge and culvert replacements to improve stream geomorphic compatibility, aquatic organism passage, and flood resilience as identified in statewide and local assessments. Focus dam removals on tributaries that provide cold-water refuge from larger warm rivers	Basin-wide	All towns	RPC, NRCD, DFW, DEC, DFPR, Watershed Groups, Municipalities, Con. Comm., landowners	CWF, PFW, EBTJV, VEM, HMPG, FRCF
32	Support strategic wood additions for fish habitat improvement, sediment storage and floodplain connection where they are deemed appropriate	As identified by VDFW, Fisheries Div.		DFW, Watershed Groups	SWG, WG, EBTJV
33	Improve flow management at hydroelectric and flood control facilities to address WQ impairment, sediment transport and to benefit downstream species	Connecticut River, Ottauquechee River, Black River	Hartford, Hartland, Cavendish, Ludlow, Springfield	USACE, GRH, GMP	USACE, GRH, GMP

Clean Water Project Explorer

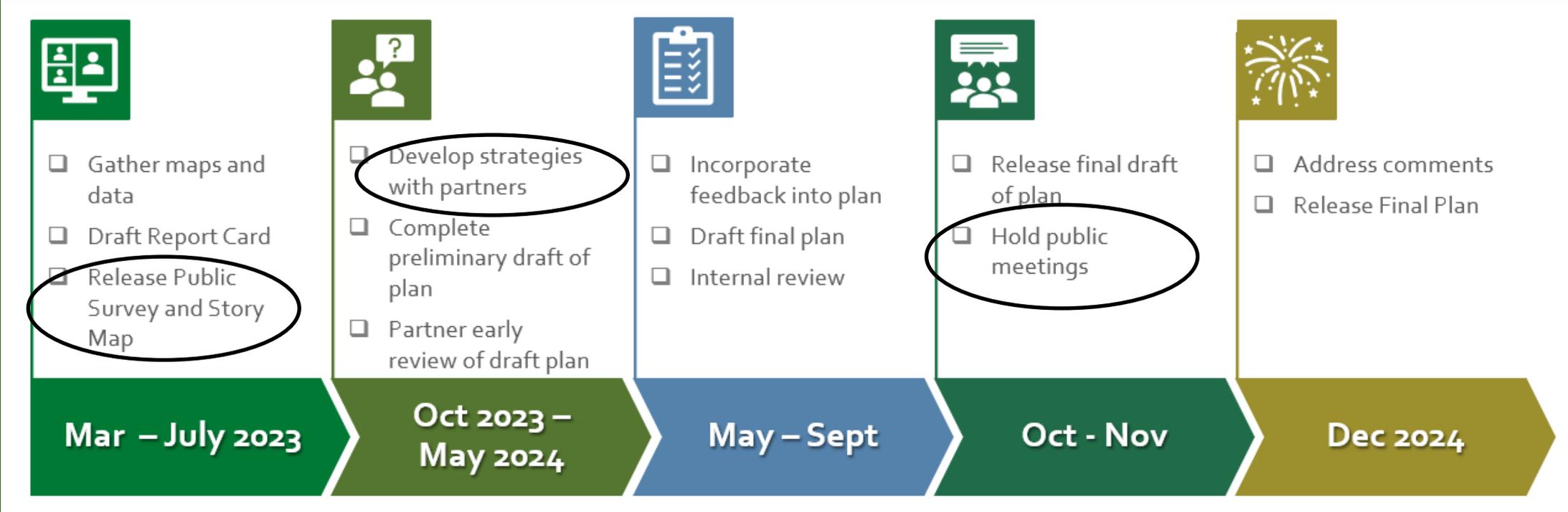
Project Status

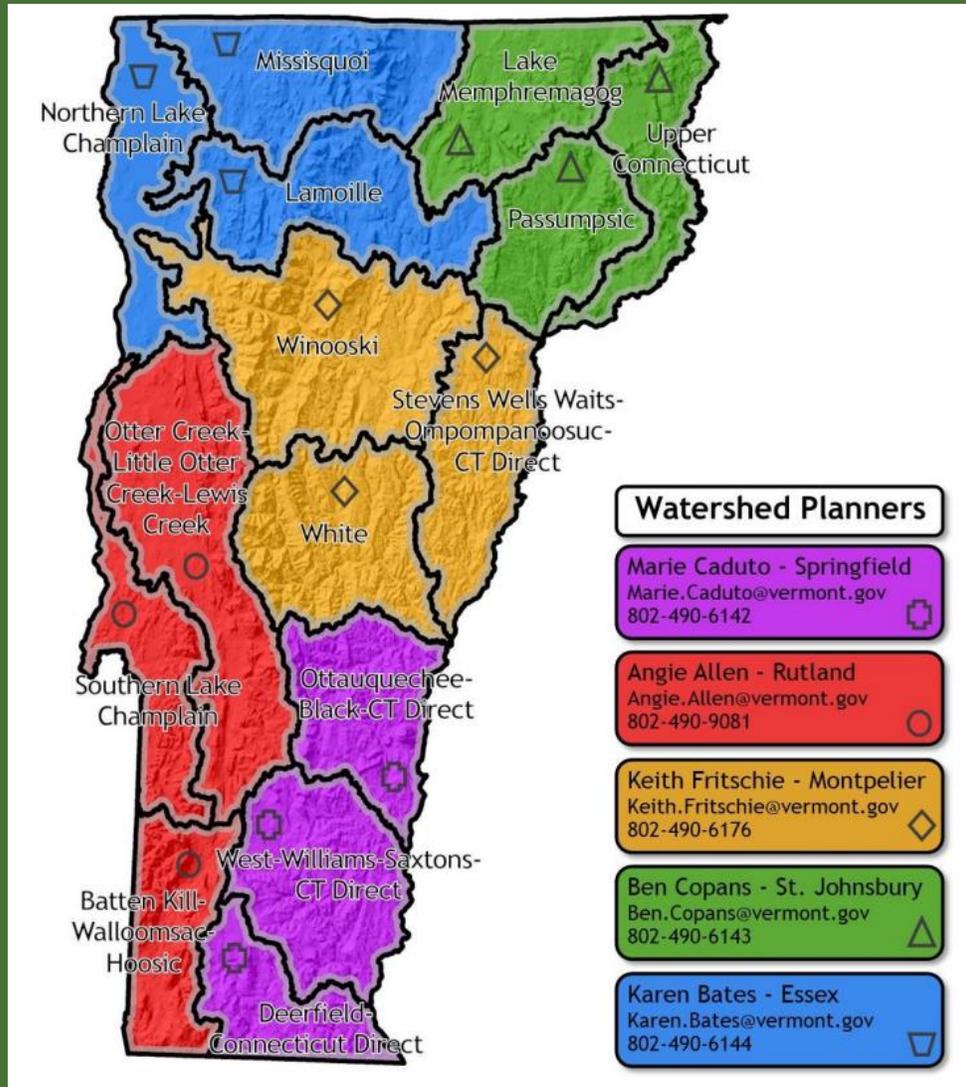
Keyword
Sector
Step
Type
County
 Include Multi County Projects
Town
Basin
 Include Multi Basin Projects
WPD ID

Search Results (Click for Listing)

Projects found: 1774
 Projects with map points found: 1585

Get involved in the planning process





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